



CALIFORNIA RICE COMMISSION

VIA ELECTRONIC MAIL: phann@waterboards.ca.gov

June 9, 2008

Mr. Paul Hann
Environmental Scientist
Central Valley Regional Water
Quality Control Board (CVRWQCB)
11020 Sun Center Drive
Rancho Cordova, CA 95670-6114

RE: CALIFORNIA RICE COMMISSION COMMENTS ON THE RELATIVE-RISK
EVALUATION FOR PESTICIDES USED IN THE CENTRAL VALLEY
PESTICIDE BASIN PLAN AMENDMENT PROJECT AREA – APRIL 2008

Dear Mr. Hann:

The California Rice Commission (CRC) is a statutory organization representing 2,500 farmers and marketers who produce rice on approximately 500,000 acres of California farmland. California rice grows primarily north of Sacramento in an area that provides winter habitat for migrating waterfowl, shorebirds and 235 species of wildlife. In California, rice is one of the top twenty commodities, the seventh largest commodity export and contributes over one billion dollars annually to the State's economy.

CRC intends to provide comments on the CVRWQCB Evaluation for Pesticides Used in the Central Valley Pesticide Basin Plan Amendment Project Area (Evaluation) for the following items:

- Background on the process in developing the Rice Pesticides Program
- Database consultations for chemical and physical property data
- Methodology
- Specific pesticide comments on fipronil, lambda cyhalothrin, pendimethalin, propanil and carbaryl

Page 2, 1.2 Background

The Evaluation cites two State Water Resources Control Board (SWRCB) reports (SWRCB, 1984; SWRCB, 1990) as presenting reviews of monitoring data, evaluations of toxicity data for aquatic species, determinations of water quality criteria for the rice pesticides molinate and thiobencarb. Referencing the reports specifically exemplifies a preference in process to conduct an extensive study of each pesticide in question by determining the load potential.

Initial monitoring of several sites provides assessment of rice field drainage. Refining the monitoring sites to five locations provides watershed representation of the Sacramento River Basin and captures 90 percent of the rice field drainage.

The CRC notes that the process led to a Basin Plan amendment listing performance goals for molinate and thiobencarb. In addition, maximum contaminant levels (MCLs) exist at the drinking water intakes for Sacramento and West Sacramento. The performance goals, and MCLs, are not the lowest possible detection numbers for molinate and thiobencarb. Establishing feasible detection numbers was a process of determining the time a product degrades to an acceptable level before release from a field. The process was extensive collaboration between the SWRCB, CVRWQCB, Department of Food and Agriculture (CDFA) (now Department of Pesticide Regulation (DPR)), county agricultural commissioners, Department of Fish and Game, city utility departments, Department of Health Services, University of California at Davis, UC Cooperative Extension, pesticide registrants, the rice industry and rice growers.

Existing performance goals, and MCLs, are feasible numbers that allow the growers and cities to maintain compliance while mitigating fish toxicity (molinate) and taste complaints (thiobencarb). Initial registration of these two pesticides took place over 30 years ago. Since that time, the U.S. Environmental Protection Agency (U.S. EPA) reregistration process provides that data meets newer standards for registration. In the 1980s, California legislation mandated data evaluations that precede the federal standards. Pesticide regulation and the registration process undergo continual mandates to align federal and California standards. The issues facing the rice industry 30 years ago are non-existent with newer pesticides due to changes in legislation that provides stringent standards primarily through the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), Title 40 Code of Federal Regulations (40CFR), the California Food and Agricultural Code and the California Code of Regulations (CCR). The current pesticide laws and regulations require evaluation by simple and, where necessary, more stringent ecological and environmental risk assessment processes including the human risk potential.

To paraphrase from the U.S. EPA website section on Reregistration & Tolerance Reassessment: The U.S. EPA is completing a one-time program to review older pesticides (those initially registered before November 1984) under FIFRA to ensure that they meet current scientific and regulatory standards. This reregistration process considers the human health and ecological effects of pesticides and results in actions to reduce risks that are of concern. The U.S. EPA will be completing all remaining reregistration eligibility decisions (REDs) by 2008, although implementation of the decisions will continue beyond 2008.

The Federal Food, Drug, and Cosmetics Act (FFDCA) as amended by the Food Quality Protection Act of 1996 (FQPA) called for reassessing existing tolerances (maximum limits for pesticide residues in food) and tolerance exemptions to ensure that they meet the safety standard of the law. The U.S. EPA integrated reregistration and tolerance reassessment to accomplish the goals of both programs most effectively. The law requires the U.S. EPA to give priority to the review of those pesticides that appear to pose the greatest risk to public health, and to reassess nearly 10,000 tolerances.

Page 3, 2.2 Pesticide Chemical and Physical Properties Databases

The Evaluation cites consultation of four databases for chemical and physical property data, including the Pesticide Action Network (PAN pesticides database; PAN, 2005). On May 30, 2008, the CVRWQCB held a workshop to present the Evaluation. At the workshop, the CVRWQCB made a statement that the PAN database was not utilized and referenced the following resources:

- 1) Agricultural Research Service (ARS database; ARS, 2004)
- 2) Extension Toxicology Network (EXTOXNET database; EXTOXNET, 2003)
- 3) Pesticide Action Network (PAN pesticides database; PAN, 2005)
- 4) Unpublished DPR chemistry / physical database (for DPR internal use)

On May 30, 2008, the CVRWQCB staff presentation listed the following databases:

- 1) DPR Pesticide Use Reporting (PUR) database (1998 – 2004)
- 2) U.S. EPA / Office of Pesticide Programs (OPP) toxicity database using the lowest 48/96/120 hour LC₅₀ or EC₅₀ values
- 3) U.S. Department of Agriculture (USDA) Agriculture Research Services (ARS) database for water solubility values and K_{oc}
- 4) DPR Surface Water Database for pesticide concentrations (1992 – 2003)

The CRC understands that inclusion of the PAN database in the Evaluation document was an oversight. However, the CRC must comment on the content of the document and requests that the CVRWQCB not use data developed or distributed by advocacy groups for pesticide evaluations.

Page 5, 3.0 Methodology

The CRC has reviewed the Western Plant Health Association (WPHA) comments, dated and submitted June 6, 2008, and fully supports the contents. In particular, “Regarding the goal of conducting further pesticide evaluation, WPHA does NOT believe that the ranking process is necessary since the pesticides are all registered under FIFRA and have already been evaluated by simple and, where necessary, more sophisticated ecological and environmental risk assessment processes (and also for their human risk potential). Priorities for development of water quality objectives should be set by determining whether specific products are actually resulting in impairment of biological integrity by evaluation of multiple lines of evidence collected from specific water bodies.”

“WPHA would recommend that CVWQCB consider using a species sensitivity distribution (SSD) approach with the receptor species for each pesticide (i.e., plants for herbicides) and using a 5th or 10th centile as the toxicity value for the ranking analysis. Using a centile developed from a SSD of toxicity values is much more credible than simply using the lowest toxicity value.”

“The sediment risk evaluation that CVWQCB’s staff authors had used was highly unrefined and only included 3 risk ranking gradients of potential, possible and unlikely. This is based on the presence and degree (K_{oc} values) of pesticides in sediment and does include a relationship to toxicity. WPHA must stress that the measured concentration of a pesticide in sediment is NOT equivalent to an adverse ecological effect.”

The CRC recommends inclusion of cultural practices to manage irrigation discharges. In addition, the current registration process assesses environmental effects of pesticides. It appears that the CVRWQCB staff distrusts the pesticide regulatory process, which leads to assumptions in the Evaluation.

Page A-23, Fipronil

In California, no agricultural uses exist for fipronil other than turf and golf courses. No registration of fipronil ever existed for use on rice in California, nor was the product a replacement for carbofuran. The only carbofuran replacement was the pyrethroid insecticide, lambda cyhalothrin, which is not an acre-to-acre substitute. Rice growers modified cultural practices for insecticide applications, and do not typically treat the entire field to maintain insect control.

The U.S. EPA registered fipronil for use on rice in other states. In California, all pesticides used and registered in the state must go through a registration process at the U.S. EPA and then favorably pass the process at DPR. The fipronil registrant never pursued registration of the product on rice in California, nor did the CRC support this action.

Page A-26, Lambda cyhalothrin

The lambda cyhalothrin evaluation would benefit from inclusion of the PUR data from 2005 and 2006. Since 2004, rice use is less significant with dramatic increases in row, annual and tree crops. The Evaluation references relatively high uses during the winter storm season, which results from increases in applications during the dormant season to permanent crops.

Lambda cyhalothrin belongs to the pyrethroid class of pesticides currently under reevaluation by DPR. The pesticide registrants and their representatives formed a Pyrethroid Work Group (PWG) to assist DPR in the pesticide reevaluation. The CRC supports the DPR reevaluation process and trusts the expertise of the PWG. Therefore, the CRC recommends the CVRWQCB allow resolution of the DPR pyrethroid reevaluation rather than develop standards that precede mitigation.

DPR and Syngenta, the registrant, monitored lambda cyhalothrin in 2000 and 2001. DPR monitored lambda cyhalothrin in 2000 at Colusa Basin Drain 5 (CBD5) and Sacramento River 1 (SR1). The detection limit was 0.01 $\mu\text{g/L}$, less than the lowest ECOTOX data value. All results were non detect.

Syngenta monitored lambda cyhalothrin in 2001 at CBD5, Tuttle Ranch (CBD at the Maxwell Diversion Dam), Johnson Ranch (at Butte Slough), Watt Ranch (CBD at Maxwell-Colusa Highway). The detection limit was 0.001 $\mu\text{g/L}$. Detections ranged from <0.001 to 0.0052 $\mu\text{g/L}$, less than the lowest AQUIRE value.

Note: Rice water holding requirement is 7 days.

Page A-40, Pendimethalin

Pendimethalin is a pre-plant herbicide used on dry seeded rice, which accounts for approximately one percent of the total acreage (5,000 acres). The total rice acres treated

from 1998 to 2004 ranged from 1,164 to 2,481 (average acres: 2,855) with the highest acreage recorded in 2001 at 5,072. These numbers do not constitute significant use of the product.

The U.S. EPA reevaluation notes that pendimethalin has low acute toxicity and was placed in Toxicity Category III, the second lowest of these standards (EPA RED 1997). The Evaluation assumes lower annual use of pendimethalin due to an U.S. EPA notice of voluntary cancellation. Pendimethalin is an older product mandated to undergo the U.S. EPA registration process where voluntary cancellations are common as registrants consolidate the list of registered products, and/or withdraw certain uses resulting from the tolerance reassessment (40CFR §180.361). In addition, pendimethalin is available for use by other registrants, so it is standard process to cancel registrations of products resulting in little or no sales.

As an example, voluntary cancellations of several propanil registrations resulted from the reregistration process. Registration cancellations for barley, oats and wheat took place in other states. In California, propanil was always a rice specific pesticide.

Page A-46, Propanil

Propanil is the only rice specific herbicide in the Evaluation, and economically the most important pesticide used on California rice. The U.S. EPA risk assessment preceding the reregistration process determined that the only issue of concern was human exposure to pesticide mixers/loaders and applicators. The reassessment of dietary risk, including public exposure through food and drinking water as required by the FFDCA indicates that propanil poses no risk concerns; therefore, no risk mitigation is needed and no further actions related to dietary risk are warranted at this time (Federal Register: OPP-2002-0033; FRL-7179-4). Pursuant to the reregistration process, the U.S. EPA ordered a data call-in (DCI) of various studies including environmental fate for the metabolite N-(3,4-dichlorophenyl) propanamide (3,4-DCA).

The U.S. EPA utilizes guidelines specifying data requirements for pesticide registration, which mandate the type of study, the number of studies and the amount of replications that a registrant must comply for data submission. The U.S. EPA Office of Prevention, Pesticides and Toxic Substances (OPPTS) developed harmonized guidelines to combine the testing guidance and requirements from the Office of Pollution Prevention and Toxics (OPPT) that appeared in 40CFR, chapter I, subchapter R, the Office of Pesticide Programs (OPP) from publications of the National Technical Information Service (NTIS), and the guidelines published by the Organization for Economic Cooperation and Development (OECD).

The purpose for harmonizing these guidelines into a single set of OPPTS guidelines is to minimize variations among the testing procedures that must be performed to meet the data requirements of the U. S. EPA under the Toxic Substances Control Act (TSCA) (15 U.S.C. 2601) and the FIFRA (7 U.S.C. 136 et seq.).

Propanil has very low toxicity to aquatic organisms; therefore, the Evaluation uses EC₅₀ (rather than the LC₅₀) in evaluating water quality data for effects to aquatic plants. The rice water holding requirement is 7 days to address environmental fate concerns

resulting from the RED (EPA RED 2003, amended 2006). Propanil is a California restricted material with stringent use regulations to mitigate drift onto sensitive crops (CCR 6462).

DPR monitored propanil in 1987, 1988, 1998 and 2001 at Colusa Basin Drain 1 (CBD1), Colusa Basin Drain 5 (CBD5), Sacramento River at Freeport and the Feather River near Olivehurst. The detection limit was 0.004 - 0.5 $\mu\text{g/L}$. All reportable detection limits were less than the aquatic threshold. One sample had a detection of 20.6 $\mu\text{g/L}$ at CBD5 on May 29, 2001, but did not exceed the toxicity threshold.

Aquatic Life Benchmarks ($\mu\text{g/L}$) Propanil

Acute Fish	Chronic Fish	Acute Invertebrates	Chronic Invertebrates	Acute Nonvascular Plants	Acute Vascular Plants	Chronic Aquatic Community
1,150	9.1	600	86.0	16	110	-

Reference: USEPA (U.S. Environmental Protection Agency), 2003a, Reregistration eligibility decision for propanil (N-(3,4-dichlorophenyl) propanamide), List A, Case 0226: U.S. Environmental Protection Agency, Office of Pesticide Programs.

The CVRWQCB staff expresses concerns with the U.S. EPA Aquatic Life Benchmarks. However, the U.S. EPA evaluates the same data whether it supports registration, develops benchmarks, or creates the EXOTOX database. The CRC is comfortable with the benchmark because the U.S. EPA evaluates the data that supports the values shown in the tables.

It is irrelevant to use one number in exceedance of a chosen threshold to pursue a TMDL for propanil. In 2001, DPR monitored propanil at 20.6 $\mu\text{g/L}$ at CBD5, and determined that the detections resulted in no toxic effects. DPR ended propanil water monitoring after 2001.

Page A-51, Carbaryl

The Evaluation lists carbaryl as a moderate overall relative-risk pesticide with rice a major use (23%). From 1998 to 2004, carbaryl applications to rice range from zero to 18,341 acres (average acres: 4,623). Current use patterns are consistent at less than 3,000 acres annually. This does not constitute a major use for carbaryl.

Thank you for the opportunity to comment on the Evaluation. The CRC appreciates the time commitment in preparing the Evaluation, and hope you consider our comments. Please contact me if you need more information and further clarification.

Sincerely,



Roberta L. Firoved
Manager, Industry Affairs